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of the tank and attachments when filled with water.

§ 178.255-8 Safety devices.

- (a) See § 173.315(i) of this subchapter.
(b) [Reserved]

[Amdt. 178-83, 50 FR 11066, Mar. 19, 1985]

§ 178.255-9 Compartments.

(a) When the interior of the tank is divided into compartments, each compartment shall be designed, constructed and tested as a separate tank. Thickness of shell and compartment heads shall be determined on the basis of total tank capacity.

- (b) [Reserved]

§ 178.255-10 Lining.

(a) If a lining is required, the material used for lining the tank shall be homogeneous, nonporous, imperforate when applied, not less elastic than the metal of the tank proper. It shall be of substantially uniform thickness, not less than $\frac{1}{32}$ inch thick if metallic, and not less than $\frac{1}{16}$ inch thick if non-metallic, and shall be directly bonded or attached by other equally satisfactory means. Rubber lining shall be not less than $\frac{3}{16}$ inch thick. Joints and seams in the lining shall be made by fusing the material together or by other equally satisfactory means. The interior of the tank shall be free from scale, oxidation, moisture and all foreign matter during the lining operation.

- (b) [Reserved]

§ 178.255-11 Tank mountings.

(a) Tanks shall be designed and fabricated with mountings to provide a secure base in transit. "Skids" or similar devices shall be deemed to comply with this requirement.

(b) All tank mountings such as skids, fastenings, brackets, cradles, lifting lugs, etc., intended to carry loadings shall be permanently secured to tanks in accordance with the requirements under which the tanks are fabricated, and shall be designed with a factor of safety of four, and built to withstand loadings in any direction equal to two times the weight of the tanks and attachments when filled to the maximum permissible loaded weight.

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(c) Lifting lugs or side hold-down lugs shall be provided on the tank mountings in a manner suitable for attaching lifting gear and hold-down devices. Lifting lugs and hold-down lugs welded directly to the tank shall be of the pad-eye type. Doubling plates welded to the tank and located at the points of support shall be deemed to comply with this requirement.

(d) All tank mountings shall be so designed as to prevent the concentration of excessive loads on the tank shell.

§ 178.255-12 Pressure test.

(a) Each completed portable tank prior to application of lining shall be tested before being put into transportation service by completely filling the tank with water or other liquid having a similar viscosity, the temperature of which shall not exceed 100 °F during the test, and applying a pressure of 60 psig. The tank shall be capable of holding the prescribed pressure for at least 10 minutes without leakage, evidence of impending failure, or failure. All closures shall be in place while the test is made and the pressure shall be gauged at the top of the tank. Safety devices and/or vents shall be plugged during this test.

- (b) [Reserved]

[29 FR 18972, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, as amended by Amdt. 178-104, 59 FR 49135, Sept. 26, 1994]

§ 178.255-13 Repair of tanks.

(a) Tanks failing to meet the test may be repaired and retested, provided that repairs are made in complete compliance with the requirements of this specification.

- (b) [Reserved]

§ 178.255-14 Marking.

(a) In addition to marking required by the American Society of Mechanical Engineers Code, every tank shall bear permanent marks at least $\frac{1}{8}$ -inch high stamped into the metal near the center of one of the tank heads or stamped into a plate permanently attached to the tank by means of brazing or welding or other suitable means as follows:

Manufacturer's name — Serial No. _____
DOT specification _____
Nominal capacity _____ (gallons)
Tare weight _____ (pounds)

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Date of manufacture _____

(b) [Reserved]

[29 FR 18972, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 178-67, 46 FR 49906, Oct. 8, 1981]

§ 178.255-15 Report.

(a) A copy of the manufacturer's data report required by the Code (See § 178.245-1(a)) under which the tank is fabricated must be furnished to the owner for each new tank.

Place _____
 Date _____
Portable tank
 Manufactured for _____ Company
 Location _____
 Manufactured by _____ Company
 Location _____
 Consigned to _____ Company
 Location _____
 Size _____ feet outside diameter by
 _____long.
 Marks on tank as prescribed by § 178.255-14 of
 this specification are as follows:
 Manufacturer's name _____
 Serial number _____
 Owner's serial number _____
 DOT specification _____
 ASME Code Symbol (par U-201) _____
 Date of manufacture _____
 Nominal capacity _____ gallons.

It is hereby certified that this tank is in complete compliance with the requirements of DOT specification No. 60.

(Signed) _____
 Manufacturer or owner

(b) [Reserved]

[29 FR 18972, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 178-83, 50 FR 11066, Mar. 19, 1985]

§ 178.270 Specification IM 101 and IM 102 steel portable tanks; general design and construction requirements.

§ 178.270-1 Specification requirements for IM 101 and IM 102 steel portable tanks.

(a) Each IM portable tank must meet the requirements of this section in addition to the requirements of § 178.271 (IM 101) or § 178.272 (IM 102). These requirements apply to IM portable tanks of diameters no greater than 2438 mm (96 inches) that are designed to carry liquids having a vapor pressure of less than 2.97 bar-absolute (43 psia) at a temperature of 50 °C (122 °F).

(b) [Reserved]

[Amdt. 178-65, 46 FR 9895, Jan. 29, 1981]

§ 178.270-2 General.

(a) Each tank, including attachments and service and structural equipment, must be designed to withstand, without loss of contents, the maximum internal pressure that can be anticipated to result from the contents and the static and dynamic stresses incurred in normal handling and transportation.

(b) For the purpose of this subchapter MAWP is the maximum pressure that an IM portable tank may experience during any normal operation (including loading and unloading). The only exception to this limitation is hydrostatic testing.

(c) Each portable tank must have a cross-sectional design that is capable of being stress analyzed either mathematically or by the experimental method contained in UG-101 of the ASME Code, or other method acceptable to the Associate Administrator.

(d) Each portable tank must be designed so that the center of gravity of the filled tank is approximately centered within the points of attachment for lifting devices.

(e) When credit is taken for insulation to reduce the required emergency venting capacity of safety relief devices, the insulation must be jacketed or otherwise protected from the accumulation of moisture or foreign matter that would decrease its efficiency or corrode the tank.

(f) Each portable tank that has a lining must have a lining material that meets the following requirements:

(1) The material used to line the tank must be—

- (i) Substantially immune to attack by the hazardous material transported;
- (ii) Homogeneous;
- (iii) Nonporous;
- (iv) Imperforated when applied;
- (v) At least as elastic as the material of the tank shell; and
- (vi) Have thermal-expansion characteristics compatible with the tank shell.

(2) The lining of the tank, tank fitting and piping must be—

- (i) Attached by bonding or other satisfactory means;
- (ii) Continuous; and